Guardian of the Galaxy? The Section 45Q Carbon Capture Tax Credit
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Guardian of the Galaxy? The Section 45Q Carbon Capture Tax Credit

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Carbon capture, use and storage (CCUS) is generally regarded as the most critical feature of any climate plan to arrive at net zero greenhouse gas emissions by the year 2050, and bipartisan U.S. legislation has embraced it. Internal Revenue Code section 45Q offers a federal income tax credit for CCUS to incentivize investment in projects that reduce emission of greenhouse gases. The credit is equal to a specific dollar amount per metric ton of qualified carbon oxide captured and sequestered or utilized. There is no cap on the amount of the credit; it is available for as many tons of qualified carbon oxide as a taxpayer can sequester or utilize in the manner required by the statute.

Qualifying sequestration or utilization includes injecting the captured carbon oxide for secure permanent storage in underground geological formations, using it in enhanced oil recovery (EOR) or for a purpose for which a commercial market exists. Qualified carbon oxide includes both carbon dioxide (CO2) and carbon monoxide (CO). Qualified carbon oxide may be captured from the emissions of fossil fuel-burning power plants but can also be a by-product of purposeful production of some other product, such as petrochemicals, ethanol or LNG or captured directly from the ambient air. This latter category is referred to as “direct air capture,” an important but nascent technology that is also benefiting from state incentives, such as those offered by California and Oregon.

The section 45Q credit amount is higher for carbon oxide that is placed in secure geological storage than carbon oxide that is utilized in EOR or commercial markets, on the theory that the taxpayer already derives income from such sales. In the case of carbon oxide captured using equipment placed in service on or after February 9, 2018, the credit is available during the 12-year period beginning on the placed-in-service date.

Legislation in 2018 significantly enhanced the credit but delegated development of certain key rules to Treasury. Treasury released proposed regulations on May 28, 2020, followed by a public comment period and hearing and issued final regulations in pre-publication form on January 6, 2021 as T.D. 9944. The final regulations are quite similar to the proposed regulations; most revisions are the result of requests made in public comments. With the release of these final regulations, investors and developers of CCUS projects should have enough certainty regarding credit availability to move forward with CCUS projects that had been tabled pending guidance.

The resolution of certain key issues as reflected in the final regulations is described below.

Carbon Capture Equipment

The section 45Q tax credit accrues to the owner of the carbon capture equipment (CCE), making the definition of CCE important to the determination of the party eligible for the credit. The proposed regulations contained a definition of CCE that listed specific equipment components included and excluded, complicating the analysis of whether the claiming taxpayer is the owner of the CCE when multiple parties are in the production chain. The final regulations eliminate the equipment lists and substitute a functional definition.

The Meaning of "Secure Geological Storage"

The majority of carbon oxide captured in the U.S. is used for EOR and most carbon capture projects will sell the carbon oxide for EOR purposes, subject to oil and gas industry demand. The injection of carbon oxide gas after traditional methods have been completed pushes additional oil to the wellbore, by some estimates as much as an additional 25% of the original oil deposit, but leaves much of the carbon oxide trapped below ground. Because section 45Q requires "secure geological storage" of the captured carbon oxide, a key regulatory issue is the monitoring, reporting and verification (MRV) of the amount so trapped. The final regulations confirmed the policy choice made in the proposed regulations permitting taxpayers to choose between complying with the EPA's rules that regulate Class VI wells (Subpart RR) or complying with the standards of ISO 27916, as long as the documentation is accompanied by certification from a qualified independent engineer or geologist.

Utilization of Carbon Oxide – Commercial Markets

In addition to sequestration or "use" in EOR, section 45Q also offers the credit for "utilization" of the captured carbon through photosynthesis, conversion to a material or chemical compound or use for "any other purpose for which a commercial market exists" as determined by the Secretary. The final regulations contain a very broad definition of commercial markets as being markets in which products or services are sold or transacted on commercial terms, but taxpayers must substantiate the commercial market when claiming the credit.

Lifecycle Analysis of Utilization

Section 45Q(f)(5)(B)(i) provides that, for purposes of determining the amount of carbon oxide utilized through photosynthesis, conversion to a material or chemical compound or for any other purpose for which a commercial market exists, the taxpayer must demonstrate, based upon an analysis of lifecycle greenhouse gas emissions (an LCA), the amount of captured carbon so utilized.

In general, an LCA systematically evaluates the environmental impact of a product, activity or process over its entire lifecycle. The final regulations repeat the proposed regulations in providing that the term "lifecycle greenhouse gas emissions" means the direct and significant indirect emissions related to the full product lifecycle, including all stages of product and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery and use of the finished product to the ultimate consumer, adjusting the mass values for all greenhouse gases to account for their global warming potential.

The final regulations now include a requirement that the "LCA must demonstrate that the proposed process results in a net reduction of carbon dioxide equivalents when compared to a comparison system" but provide no additional clarification or examples illustrating permitted parameters for LCAs.

The LCA must be performed by or verified by an independent third party and must contain documentation consistent with ISO 14044 regarding LCAs. The LCA must be approved by the IRS, after technical review by the DOE, before the taxpayer files a claim for the credit. Separate procedural guidance is forthcoming on the submission and review process.

Transferring the Credit

Under subsection 45Q(f)(3), the taxpayer otherwise eligible for the credit may make an election to cause the credit to be allowable to the person that sequesters or uses the captured carbon. The proposed regulations provide that the taxpayer otherwise eligible for the credit may transfer part or all the credit and may divide the credit among multiple parties when multiple parties are performing the sequestration or disposition activity; the division is pro rata according to the amount of carbon oxide disposed of by each party. The taxpayer makes this election annually, and the regulations contain specifics as to the information that should be provided by both the electing and the recipient taxpayers.

The final regulations clarify that the credit may not be transferred to a party that performs the carbon oxide capture on behalf of the taxpayer or to a subcontractor of the party contracted to perform the sequestration or utilization.

Credit Recapture

The tax credit can be lost or recaptured, triggering tax liability, in the unlikely case that the applicable carbon oxide subsequently escapes into the atmosphere or ceases to be used in a manner consistent with the statutory requirements. The statute does not, however, contain specifics regarding the method for determining that a carbon oxide release has occurred, nor does it provide an outside date after which leakage would not result in credit loss.

The regulations provide that a recapture event occurs when the carbon oxide for which a credit has been claimed ceases to be captured, disposed of, or used in EOR during the recapture period, if the leaked amount of carbon oxide in a taxable year exceeds the amount of carbon oxide disposed of or used for EOR in that same taxable year, with the recaptured tonnage being the excess of the leaked amount over the disposed of or used amount. The recapture amount is equal to the product of the recaptured tonnage and the applicable statutory credit rate.

The final regulations have limited the recapture period to the earlier of three years (as opposed to five years as in the proposed regulations) after the last taxable year in which the taxpayer claimed a credit or the date monitoring of leakage ends under the applicable regulatory requirements. Thus, even if compliance with environmental regulations calls for monitoring for leakage for many years after the credit is claimed, the taxpayer would not be exposed to tax credit recapture beyond three years from the last year of the credit.

Summary

With the current focus on clean energy and greenhouse gas reduction, tax incentives for CCUS are here to stay. Now that final regulations have been promulgated under section 45Q, carbon capture project developers and investors will be moving rapidly to take advantage of the credit.

For more information, register now for the authors' upcoming program, Guardian of the Galaxy? The Section 45Q Carbon Capture Tax Credit , hosted by PLI.

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